sen lässt. Worauf das beruht, ist zurzeit unklar. Die Lichtbauchreaktion wird wahrscheinlich von den Facettenaugen gesteuert, weil sie während der Entwicklung der Tiere erst dann auftritt, wenn die ersten Ommatidien ausgebildet sind (SEIFERT[1]). Eine unterschiedliche Verteilung des Abschirmpigmentes in den Facettenaugen bei Hell- und Dunkeltieren, die die Abhängigkeit der Unterschiedsempfindlichkeit von der Gesamtintensität erklären würde, konnten wir an Gefrierschnitten nicht festellen.

Summary. Between 2 sources of light, free-swimming *Artemia salina* turn their ventral side towards the brighter one. The ratio of the 2 light intensities at the threshold for this reaction is independent of the direction of gravity. This shows, together with other observations, that the body orientation is exclusively controlled by the direction of the impinging light.

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Chromosomes of Leptodactylidae (Amphibia anura)

Within the group of the Amphibia anura, the South American family of the Leptodactylidae, constituted by several species most of which are still unknown from the cytogenetical point of view, is of particular interest.

The only species studied up to the present are: *Pseudopaludicola falcipes*[1], *Leptodactylus ocellatus*[1-3], *Eleutherodactylus guentheri*, *Eupemhix nattereri*, with $2n = 22$ chromosomes[2], *Crossodactylus dispar* with $2n = 26$, and *Pseudopaludicola ameghini* with $2n = 20$[2].

According to present knowledge, those species with 22 chromosomes which are distributed in different and far-away geographical regions, prevail. BECAK et al.[2] found that *P. ameghini* had $2n = 20$, this being the lowest number described up to now for this family. Nevertheless, we have found a species of the same genus, *P. falcipes*[1] with $2n = 22$ (see Table). In order to extend these investigations, 23 species belonging to this family (see Table), whose karyotypes are composed of metacentric and submetacentric chromosome pairs, were studied by us.

Species	Diploid No. ($2n$)	Source
Leptodactylus pentadactylus	22	Tingo María (Perú)
L. prognathus	22	Treinta y Tres (Uruguay)
L. bufonius	22	Santiago del Estero (Argentina)
L. ocellatus	22	Montevideo (Uruguay)
L. chaquensis	22	Corrientes (Argentina)
L. laticeps	22	Santiago del Estero (Argentina)
Pseudopaludicola falcipes	22	Montevideo (Uruguay)
Physalaemus gracilis	22	Treinta y Tres (Uruguay)
P. biligonigerus	22	Treinta y Tres (Uruguay)
Pleurodema cinerea	22	Tucumán (Argentina)
P. tucumana	22	Tucumán (Argentina)
P. nebulosa	22	La Rioja (Argentina)
Eleutherodactylus discoidalis	22	Tucumán (Argentina)
E. ranoides	22	San José (Costa Rica)
E. guentheri	22	Sao Paulo (Brasil)
Eupsophus nodosus	22	Santiago (Chile)
Cycloramphus fuliginosus	22	Sao Paulo (Brasil)
Thoropa miliaris	26	Sao Paulo (Brasil)
Calyptocephalella gayi	26	Santiago (Chile)
Telmatobius (marmoratus group)	22	La Paz (Bolivia)
Elosia aspera	26	Sao Paulo (Brasil)
E. lateristrigata	26	Sao Paulo (Brasil)
Crossodactylus gaudichaudii	22	Sao Paulo (Brasil)

In general, during the meiotic prophase, at the diplonema stage, the bivalents were found to have an anular configuration with 2 distal chiasmata. At the moment of metaphase I, the bivalents remain highly condensed, while neither the position of the chiasmata nor the morphology shown in the early stages of meiotic prophase could be distinguished. This phenomenon is characteristic of the Amphibia anura. In some species bivalents with only 1 distal chiasma can be found, giving place to open ring configurations.

Somatic and gonial heteromorphic pairs or heteropycnotic bivalents which could indicate the existence of cytologically differentiated sex chromosomes were not found.

Recently, BIANCHI and MOLINA[3] have demonstrated that DNA synthesis *in L. ocellatus* somatic chromosomes does not show sex-linked differences in chromosome morphology or in patterns of chromosome replication which would constitute a new proof of the absence of a special pair that could be distinguished as sex chromosomes.

If the variation from 20–26 chromosomes found in these karyotypes is accompanied by a modification of the relations of shape and size of the chromosomes, there is no doubt that chromosomic rearrangements have been produced during the course of the evolution in the different members of the family. This fact contrasts with the case of the *Bufonidae*, which constitute a more stable group in spite of the close relationship between both families.

Resumen. Se estudiaron los cariotipos de 23 especies de la familia sudamericana Leptodactylidae (anfibios anuros), no hallándose cromosomas sexuales citológicamente diferenciados.

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